

Appl. No. 09/825,276
RCE Amendment and
Reply to Final Office action of 27 July 2005

Page 2 of 15

Amendments to the Claims:

A listing of the entire set of pending claims (including amendments to the claims, if any) is submitted herewith per 37 CFR 1.121. This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently amended) A method of operating a radio communication system having that includes a downlink channel for transmissions by a primary station to one or more-at least one secondary stations and an uplink ~~random~~-access channel for transmissions from the ~~or each~~ secondary station to the primary station, the method comprising:

transmitting a first signal from the primary station on the downlink channel that includes an indication of a transmit power level used for the transmitting,

determining radio channel characteristics of the downlink channel at the secondary station, based on the indication of the transmit power level,

the secondary station transmitting an uplink signal from the secondary station on the ~~random~~-uplink access channel giving an indication of the radio channel characteristics, and

the primary station transmitting a signal from the primary station on the downlink channel at a power level and/or bit rate which takes into account the indicated indication of the radio channel characteristics, wherein the transmitting of the uplink signal is a first communication to which the transmitting of the downlink signal is responsive.

2. (Currently amended) A method of operating a radio communication system having that includes a downlink channel for transmissions by a primary station to one or more-at least one secondary stations and an uplink ~~random~~-access channel for transmissions from the ~~or each~~ secondary station to the primary station, the method comprising:

Appl. No. 09/825,276
RCE Amendment and
Reply to Final Office action of 27 July 2005

Page 3 of 15

~~the secondary station transmitting an uplink signal from the secondary station on the random-uplink access channel, which the uplink signal including an indication of a transmit power level used for the transmitting, can be used by the primary station to determine the prevailing~~

~~determining radio channel characteristics of the random-uplink access channel at the primary station based on the indication of the transmit power.~~

~~the primary station in response to determining the radio channel characteristics transmitting a signal from the primary station on the downlink channel at a power level and/or bit rate which takes into account the determined radio channel characteristics, wherein the transmitting of the uplink signal is a first communication to which the transmitting of the downlink signal is responsive.~~

3. (Currently amended) A-~~The method as claimed in~~ of claim 1 or 2, characterised in that wherein the primary station transmits a signal including an indication of the transmitted power level, and in that a secondary station:

receiving said signal measures the a received signal strength associated with the first signal, and

determines the radio channel characteristics based on the indication of the transmit power level and the received signal strength of the downlink and transmits a signal including an indication of the channel characteristic on the random access channel.

4. (Canceled)

Appl. No. 09/825,276
RCE Amendment and
Reply to Final Office action of 27 July 2005

Page 4 of 15

5. (Currently amended) A ~~The method as claimed in~~ of claim 1 or 2, ~~characterised in that a wherein the~~ secondary station:

retransmits an access preamble signal at successively increasing power levels until an acknowledgement signal is received from the primary station, and
~~the secondary station in response to the receipt of the acknowledgement signal, transmitting~~ transmits a message containing an indication of the power level associated with the access preamble signal for which the acknowledgement signal was received ~~which can be used by the primary station to determine the prevailing radio channel characteristic from the particular retransmission of the access preamble signal acknowledged.~~

6. (Currently amended) A ~~The method as claimed in~~ of claim 1 or 2, ~~characterised in that a wherein~~

the secondary station retransmits an access preamble signal at successively increasing power levels until an acknowledgement signal is received from the primary station, each transmission of the access preamble signal including an indication of its power, and ~~in that~~

~~the primary station stores an indication of the lowest transmission power of the access preamble signal and can determine~~ the radio channel characteristics by obtaining the difference between the lowest transmission power and based on the power of the access preamble signal received and acknowledged.

7. (Currently amended) A ~~The method as claimed in~~ of claim 1 or 2, ~~characterised in that wherein the~~ radio channel characteristics ~~comprises the include a~~ radio attenuation characteristic.

Appl. No. 09/825,276
RCE Amendment and
Reply to Final Office action of 27 July 2005

Page 5 of 15

8. (Currently amended) A ~~The method as claimed in~~ of claim 1 or 2, ~~characterised in that a~~ wherein the secondary station;

determines ~~the a~~ signal to interference ratio (SIR) of a signal transmitted by the primary station, and

includes an indication of the determined SIR in a signal transmitted on the ~~random-uplink~~ access channel.

9. (Currently amended) A ~~The method as claimed in~~ of claim 1 or 2, ~~characterised in that~~ wherein

the uplink signal ~~comprises~~ includes a message part of the ~~random-uplink~~ access channel signal.

10. (Currently amended) A ~~The method as claimed in~~ of claim 1 or 2, ~~characterised in that~~ wherein:

the ~~random-uplink~~ access channel includes the transmission of access preambles by the secondary station, and in that

the access preambles are encoded with a selected one of a plurality of signatures, and ~~in that~~ the selected signature is chosen according to a quantity to be signalled signaled.

11. (Currently amended) A ~~The method as claimed in~~ of claim 1 or 2, ~~characterised in that~~ wherein:

the ~~random-uplink~~ access channel ~~comprises~~ includes a plurality of access sub-channels, and ~~in that~~

an access sub-channel is selected by ~~a~~ the secondary station for the transmission of an access preamble ~~in accordance with~~ based on a quantity to be signalled signaled.

Appl. No. 09/825,276
RCE Amendment and
Reply to Final Office action of 27 July 2005

Page 6 of 15

12. (Currently amended) A ~~The~~ method as claimed in of claim 1 or 2, characterised in that wherein:

the ~~random uplink~~ access channel is a CDMA channel, and in that
the transmission of an access preamble is offset in time by a number of chip periods ~~corresponding to~~ based on a quantity to be signalled signaled.

13. (Currently amended) A radio communication system comprising:

a primary station having ~~transceiving means for transmitting that includes a~~
first transceiver that is configured to transmit signals on a downlink channel, at least
one of the signals including an indication of a transmit power level used to transmit
the signal, and

at least one secondary station having ~~transceiving means for transmitting that~~
includes:

a second transceiver that is configured to:

receive the signals from the primary station and

transmit uplink signals to the primary station on an random
access channel, and the secondary station having means for
determining the prevailing

a measuring device that is configured to determine radio channel
characteristics of the ~~random access downlink~~ channel based on the indication
of the transmit power level,

wherein:

at least one of the uplink signals includes an indication of the radio channel
characteristics, and for transmitting these characteristics to the primary station,
the primary station having ~~means responsive to the receipt of the radio channel~~
~~characteristics for determining~~ is configured to determine the power level and/or bit
rate of a subsequent downlink signals in dependence on the radio channel
characteristics, ~~wherein the transmitting of the uplink signals is a first communication~~
~~to which the transmitting of the downlink signal is responsive.~~

Appl. No. 09/825,276
RCE Amendment and
Reply to Final Office action of 27 July 2005

Page 7 of 15

14. (Currently amended) A ~~The system as claimed in~~ of claim 13, ~~characterised in that wherein~~

~~the or each at least one secondary station has encoding means for transmitting includes an encoder that is configured to transmit access preamble signals as CDMA signals, and in that said encoding means includes signal offsetting means for offsetting to offset in time an access preamble signal by a number of chip periods corresponding to the radio channel characteristics.~~

15. (Currently amended) A secondary station comprising:

~~transceiving means for receiving a transceiver that is configured to receive downlink signals transmitted from a primary station and for transmitting to transmit uplink signals on an random access channel, and~~

~~means for determining the prevailing a measuring device that is configured to determine radio channel characteristics of the random access downlink channel, based on an indicator of transmit power from the primary station, and~~

~~wherein~~

~~at least one of the uplink signals includes an indicator of the radio channel characteristics for transmitting these characteristics to the primary station, wherein the transmitting of the uplink signals is a first communication to which the transmitting of the downlink signals are responsive.~~

16. (Currently amended) A ~~The secondary station as claimed in~~ of claim 15, ~~characterised in that the secondary station further includes encoding means for transmitting access preamble signals as CDMA signals and in that said encoding means includes signal offsetting means for offsetting including~~
~~an encoder that is configured to offset in time an access preamble signal by a number of chip periods corresponding to the radio channel characteristics.~~

Appl. No. 09/825,276
RCE Amendment and
Reply to Final Office action of 27 July 2005

Page 8 of 15

17. (Currently amended) A primary station comprising:

~~transceiving means for transmitting a transceiver that is configured to:~~
~~transmit~~ signals on a downlink channel to at least one secondary station, and for receiving
~~receive an uplink random access channel signals including indicia useable for determining the prevailing radio channel characteristics of the random access channel that includes an indication of a transmit power level associated with the signal, and~~
~~means responsive to the indicia for determining the a measuring device that is configured to determine a power level and/or bit rate to transmit downlink signals to the at least one secondary station based on the indication of the transmit power, wherein the received uplink random access signals are a first communication to which the downlink signals are responsive.~~

18. (Currently amended) A ~~The~~ primary station ~~as claimed in~~ of claim 17, wherein the uplink signals comprise CDMA access preamble signals, and the ~~indicia comprises~~ indication includes a timing offset of the access preamble signal relative to a reference time, ~~characterised in that and~~ the primary station ~~comprises means for determining is configured to~~ determine the timing offset and for ~~adjusting the to adjust~~ a subsequent transmit power level based on ~~in accordance with~~ the timing offset.

19. (New) A secondary station comprising:

a transceiver that is configured to
repeatedly transmit an access preamble signal to a primary station at successively increasing power levels until an acknowledgement signal is received from a primary station, and
communicate the power level associated with the access preamble signal associated with the acknowledgement signal to the primary station.

Appl. No. 09/825,276
RCE Amendment and
Reply to Final Office action of 27 July 2005

Page 9 of 15

20. (New) The secondary station of claim 19, wherein
each access preamble signal that is transmitted includes an indication of the
power level associated with the access preamble signal.

21. (New) The secondary station of claim 19, wherein
the transceiver communicates the power level in a message transmitted to the
primary station upon receipt of the acknowledgement signal.